

AMENDMENTS TO THE CLAIMS

Pursuant to 37 C.F.R. § 1.121 the following listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) An antenna diversity communications device for communicating by frequency hopping among a plurality of channels, comprising:

at least two antennas;

~~means for determining~~ a unit operable to determine a pre-detection diversity of signals from said at least two antennas; and

~~means for switching~~ a unit operable to switch signals from said at least two the antennas based on frequency correlation between a current channel and a next channel.

2. (Original) An antenna diversity communications device according to claim 1 wherein said frequency correlation is related to a magnitude of a frequency difference between said current channel and said next channel.

3. (Currently Amended) An antenna diversity communications device comprising:

at least first and second antennae;

~~a switching means for alternatively selecting~~ switching unit operable to
alternatively select a received signal from one of said at least first and second antennas;

a reception information measuring ~~means for measuring~~ unit operable to measure
received information that indicates a receiving condition of ~~the~~ one of said at least first and
second antenna currently selected by said switching ~~means~~ unit;

a memory ~~means for storing~~ unit operable to store frequency difference information between a current channel and a next channel;

a switching control ~~means for controlling~~ unit operable to control said switching ~~means~~ unit; said switching control ~~means~~ unit being responsive to said frequency difference information and said signal information to order said switching ~~means~~ unit to connect to a different one of said at least first and second antennas when hopping to a next channel if a high frequency correlation exists between said current channel and said next channel and a current receiving condition is poor.

4. (Original) An antenna diversity communications device according to claim 3, wherein:

said frequency difference information is a frequency range between a frequency of said current channel and a frequency of said next channel; and

said signal information is received intensity of a corresponding antenna.

5. (Currently Amended) An antenna diversity communications device according to claim 4, further comprising:

a threshold memory ~~means for storing~~ unit operable to store a first threshold value for determining a level of frequency correlation and a second threshold value for determining a quality of the receiving condition;

~~means for comparing~~ a unit operable to compare a frequency difference between said current channel and said next channel with said first threshold value; and

~~means for comparing~~ a unit operable to compare said signal information with the second threshold value.

6. (Currently Amended) An antenna diversity communications device according to claim 5, further comprising:

an input ~~means for receiving~~ unit operable to receive environment information of a surrounding space where communications are conducted; and

said switching control ~~means~~ unit includes ~~means for updating~~ a unit operable to update said first threshold value based on received environment information.

7. (Currently Amended) An antenna diversity communications device according to claim 6, further comprising:

said received environment information includes ~~means~~ an item for discriminating between at least two types of spaces.

8. (Original) An antenna diversity communications device according to claim 7, wherein said at least two spaces include at least spaces typified by at least two of houses, offices and outdoors.

9. (Original) An antenna diversity communications device according to claim 8, wherein:

said first threshold is about 10 MHz when said environment information indicates a house environment;

said first threshold is about 1 MHz when said environment information indicates an office environment; and

said first threshold is in the order of 200 kHz when said environment information indicates an outdoor environment.

10. (Original) An antenna diversity communications device according to claim 7, wherein said first threshold is a threshold giving predetermined values of correlation in said at least first and second spaces.

11. (Currently Amended) An antenna diversity communications device according to claim 3, wherein:

said switching control ~~means—omits~~ unit is operable to omit ordering said switching ~~means~~ unit to switch to another antenna when hopping to a next channel if a high frequency correlation exists between said current channel and said next channel and [a] the current receiving condition is good.

12. (Currently Amended) An antenna diversity communications device for communicating by means of frequency hopping, said communications device comprising:

at least first and second communications paths;

a first antenna on said first communications path;

a second antenna on said second communications path;

a switching ~~means for alternatively selecting~~ unit operable to alternatively select one said first and second communications paths from said at least first and second communications paths;

a reception information measuring ~~means for measuring~~ unit operable to measure signal information that indicates a receiving condition of a path selected by said switching ~~means~~ unit;

a memory ~~means for storing~~ unit operable to store signal information measured by said reception information measuring ~~means~~ unit; and

~~means for selecting~~ a unit operable to select one of said at least first and second communications paths based on said signal information stored in said memory ~~means~~ unit;

wherein said signal information of a hopping frequency of a current channel is updated each time said hopping frequency is switched, said signal information of said hopping frequency of said current channel being stored in said memory unit.

13. (Currently Amended) An antenna diversity communications device according to claim 12, wherein said signal information stored in said memory ~~means~~ unit includes at least one combination of a value showing received intensity, a value showing quality of receiving conditions, and a receiving error detection result.

14. (Currently Amended) An antenna diversity communications device according to claim 12, wherein said memory ~~means~~ unit includes ~~means for storing~~ a unit operable to store measured information for all hopping frequencies.

15. (Currently Amended) An antenna diversity communications device according to claim 14, wherein said switching ~~means~~ unit includes ~~means for switching a unit operable to switch~~ between said at least first and second communications paths when said hopping frequency is switched based on said signal information of said next channel stored in said memory ~~means~~ unit.

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17. (Currently Amended) An antenna diversity communications device according to claim ~~16~~14, wherein said signal information of said memory ~~means~~ unit is updated altogether in a range where high correlations between said corresponding hopping frequencies exist.

18. (Currently Amended) An antenna diversity communications device according to claim 17, including ~~means for permitting a unit operable to permit~~ adjustment of a range where said signal information of said memory ~~means~~ unit is updated altogether.

19. (Currently Amended) An antenna diversity communications device according to claim 12, wherein said memory ~~means~~ unit includes ~~means for storing a unit operable to store~~ said measured signal information not for all hopping frequencies but for each divided band formed by dividing the spectrum spread band.

20. (Currently Amended) An antenna diversity communications device according to claim 19, wherein said switching ~~means~~ unit includes ~~means for switching a unit operable to~~

switch between said at least first and second communications paths when switching said hopping frequency based on said signal information to be stored in said memory ~~means~~ unit concerning said band where said next channel belongs.

21. (Currently Amended) An antenna diversity communications device according to claim 19, wherein said signal information of said corresponding band of said memory ~~means~~ unit is updated each time when said hopping frequency is switched.

22. (Currently Amended) An antenna diversity communications device according to claim 19, wherein:

said memory ~~means-stores~~ unit is operable to store only signal information of the single communications path selected by said switching ~~means~~ unit; and

said switching ~~means~~ unit includes ~~means-for-switching~~ a unit operable to switch said communications path to another communications path if said signal information of said communications path is smaller than said prescribed value.

23. (Currently Amended) An antenna diversity communications device according to claim 12, wherein:

said memory ~~means-stores~~ unit is operable to store all of said signal information for said at least first and second communications paths; and

said switching ~~means~~ unit further includes ~~means-for-switching~~ a unit operable to switch one of said at least first and second communications paths that provides the best communications condition.

24. (Currently Amended) An antenna diversity communications device according to claim 12, further comprising ~~means for selecting~~ a unit operable to select one of said at least first and second communications paths with a uniform probability in an initial condition.

25. (Currently Amended) An antenna diversity communications device according to claim 12, further comprising ~~means for returning~~ a unit operable to return said memory ~~means~~ unit ~~returns~~ to the initial condition if no communications are conducted for a prescribed time.

26. (Original) An antenna diversity communications device according to claim 12, wherein said signal information is the received intensity of the antenna in the corresponding signal path.

27. (Original) An antenna diversity communications device according to claim 12 wherein transmission is carried out using said antenna of the switched communications path.

28. (Currently Amended) An antenna diversity communications device according to claim 12, including ~~means for updating~~ a unit operable to update said signal information concerning said transmission channel of said memory ~~means~~ unit using ~~ACK/NCK~~ ACK/NAK information in a response to the transmission.